

## **SEEKING A COMMON LANGUAGE** **FOR SPACECRAFT COMMAND AND CONTROL**

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October 20,1995

The Jet Propulsion Laboratory has been building, launching, and operating deep-space probes for more than 30 years. Each space mission requires an onboard commanding and sequencing capability to direct the spacecraft through various actions to accomplish the scientific and engineering tasks required by the mission objectives. For all JPL missions from Viking through Cassini, onboard commanding and sequencing has been implemented by an onboard interpreter driven by a set of tables generated by ground software. Although the functions which must be supported by the interpreter are similar from mission to mission, most missions have designed and used a language different from those used on previous missions.

The design and use of a different language for each JPL mission has been expensive both in terms of the design and implementation effort for the language and in terms of the effort required to develop a ground system to support the language. For efficiency and cost reduction, future missions should be able to share one common language for onboard commanding and sequencing.

A study is currently in progress seeking a common language which could be used for command and control of multiple JPL missions. A set of requirements has been generated and a prototype effort is currently underway to investigate the feasibility of using a commercially-available languages. The paper will discuss the progress of the task and initiate discussion of languages familiar to workshop attendees.

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The research described in this paper is being carried out by the Jet Propulsion laboratory, California institute of Technology, under a contract with the National Aeronautics and Space Administration.